Conservation Agreement for the Yellow-billed Loon (*Gavia adamsii*)

Draft for Public Review and Comment

February, 2006

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for the

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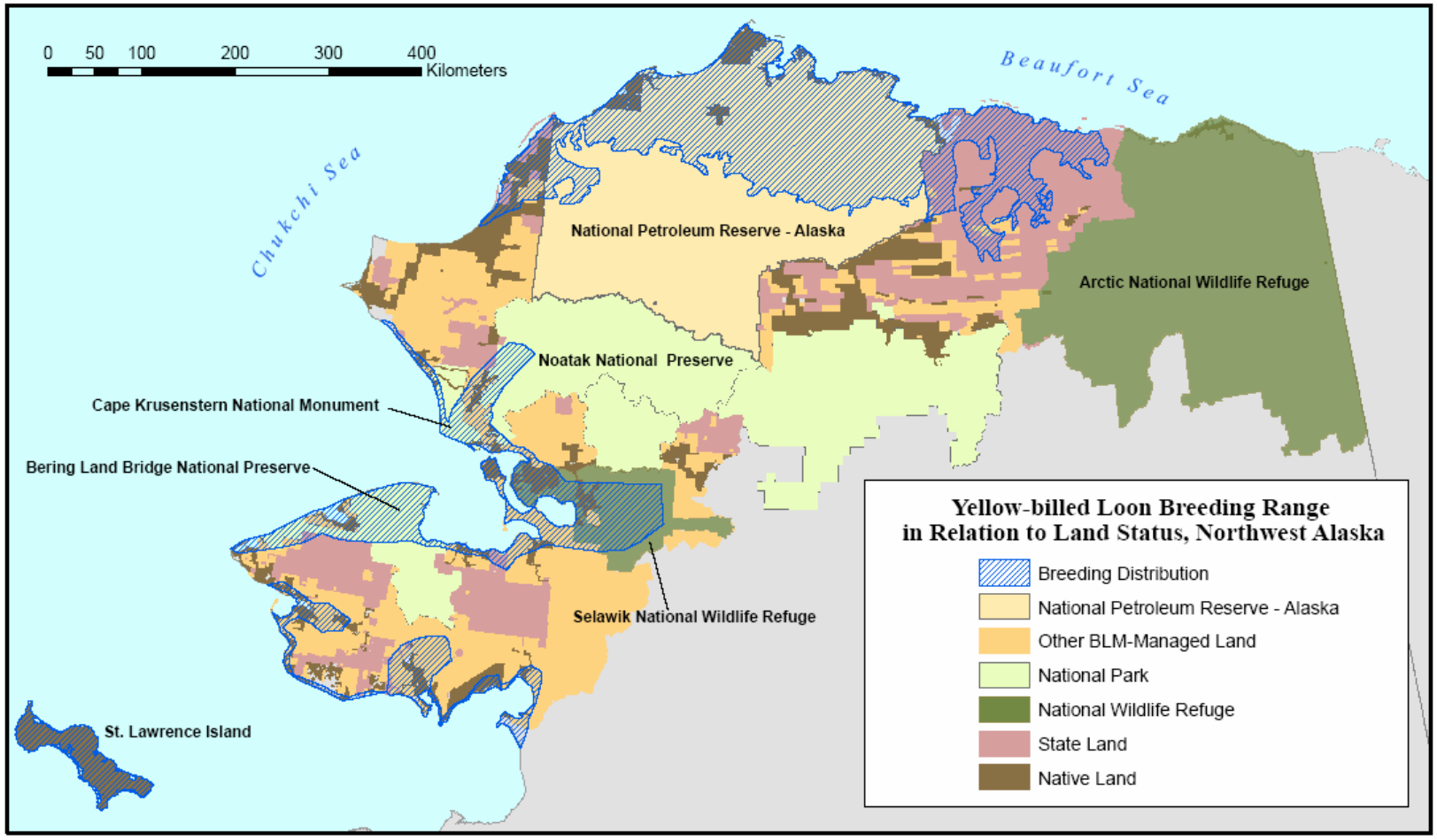
I. Introduction

The Conservation Agreement (Agreement) for the yellow-billed loon (YBLO) *Gavia adamsii,* has been developed as a cooperative effort among local, state and federal resource agencies in northern and western Alaska in order to take measures necessary for the conservation of the species. Implementation of this Agreement will contribute significantly to reducing or eliminating current, potential, or future threats to the YBLO and its habitat.

In northern Alaska, YBLO breed on lands within the National Petroleum Reserve–Alaska (NPR-A), and on State of Alaska lands between the Colville and the Canning rivers (Fig. 1). These areas also include Alaska Native-owned lands. In western Alaska YBLO are found breeding primarily along the coastal fringe of the Seward Peninsula on Selawik National Wildlife Refuge (NWR), administered by the U.S. Fish and Wildlife Service (USFWS); Cape Krusenstern National Monument and Bering Land Bridge National Preserve, administered by the National Park Service (NPS); and on scattered small parcels of Bureau of Land Management (BLM) and Alaska Native-owned lands. Small numbers of YBLO have also been found nesting on Alaska Native-owned lands located on St. Lawrence Island.

The greatest YBLO breeding concentrations in Alaska are found on the North Slope, with highest densities between the Meade and Ikpikpuk rivers, on the Colville River Delta, and in areas west, southwest and east of Teshekpuk Lake. Areas of greatest YBLO concentrations are within the National Petroleum Reserve – Alaska (NPR-A). Currently, BLM is leasing lands for oil and gas exploration within the Northeast (NE) and Northwest (NW) areas of the NPR-A. The Alpine Satellite Development Project Environmental Impact Statement (ASDP EIS) was signed in September 2004 and allows for development of the first oil and gas facilities within the NPR-A near the Colville River Delta. Areas with moderate concentrations of YBLO on State and Alaska Native lands on the Colville River Delta have been leased, and oil and gas development will expand from the currently active Alpine project. On these lands, petroleum development and wildlife are largely under the jurisdiction of the Alaska Departments of Natural Resources (ADNR) and Fish and Game (ADFG). Other State lands, with relatively low YBLO density, have been developed for oil and gas extraction and production, including the Kuparuk and Prudhoe Bay oil fields.

In western Alaska, conservation concerns on the Selawik NWR include gravel extraction, road construction, climate-induced water level changes (Smith et al. 2005), and proposed natural gas extraction with accompanying power infrastructure on the Kobuk River Delta. However, there are so few YBLO on Selawik NWR that these activities may not affect them. Extractive industries and infrastructure development are unlikely threats in National Park lands on the Seward Peninsula, where there are far more YBLO, but oil spills, subsistence harvest and bycatch, and effects of climate change on water levels are potential threats.



Yellow-billed Loon breeding distribution follows Earnst (2004); land status from Alaska Department of Natural Resources, General Land Status Database

Figure 1. Yellow-billed loon breeding distribution in Alaska.

II. Goal

The goal of this Agreement is to protect YBLO and their breeding, brood-rearing, and migrating habitats in Alaska, such that current or potential threats in these areas are avoided, eliminated or reduced to the degree that the species will not become threatened or endangered from these threats within the foreseeable future.

III. Objectives

The objectives of this Agreement fall into four broad strategies: 1) implement specific actions to protect YBLO and their habitats from potential impacts of land uses and management activities, including oil and gas exploration and development; 2) inventory and monitor YBLO populations, even in areas where significant development is not likely; 3) determine and reduce the impact of subsistence activities (harvest and fisheries bycatch); and 4) conduct biological research on YBLO, including YBLO responses to management actions. Under these four strategies, specific objectives include:

Strategy 1:

A. Ensure that land management practices in NPR-A do not contribute to YBLO becoming threatened or endangered with extinction.
B. Ensure that land management practices on the Colville River Delta do not contribute to YBLO becoming threatened or endangered with extinction.

Strategy 2:

A. Continue and improve inventories and monitoring of YBLO in primary breeding areas.
B. Inventory and monitor YBLO in western Alaska.

Strategy 3:

A. Measure and reduce the number of YBLO incidentally caught in subsistence fisheries.
B. Measure and reduce the number of YBLO taken by subsistence hunters.

Strategy 4:

A. Periodically evaluate YBLO research and monitoring priorities, including population surveys and evaluation of protective management prescriptions.
B. Cooperatively work toward funding YBLO research and monitoring priorities.

IV. Additional Benefits

Protecting and mitigating YBLO from the impacts of land management activities may also result in habitat protections for a variety of other tundra-nesting birds, including some of conservation concern. Information gained from research and monitoring efforts may be applied to other loon species, including Pacific (*G. pacifica*), red-throated (*G. stellata*), and common (*G. immer*) loons. Two species classified as threatened under the Endangered Species Act, the spectacled eider (*Somateria fischeri*) and the Alaska-breeding population of Steller's eider (*Polysticta*

stelleri), nest within areas and habitats used by YBLO and will benefit from management prescriptions to protect YBLO. Other species that may benefit from YBLO habitat protections, including BLM Sensitive Species and USFWS Species of Management Concern, are northern pintail (*Anas acuta*), greater white-fronted goose (*Anser albifrons*), brant (*Branta bernicla*), cackling goose (*Branta hutchinsii*), lesser snow goose (*Chen caerulescens*), long-tailed duck (*Clangula hyemalis*), tundra swan (*Cygnus columbianus*), king eider (*Somateria spectabilis*), Arctic tern (*Sterna paradisaea*), and shorebirds including red phalarope (*Phalaropus fulicarius*) and red-necked phalarope (*Phalaropus lobatus*).

V. Parties

The listed parties will implement and coordinate conservation actions of this Agreement, as set forth in Section X below.

Alaska Department of Fish and Game
Alaska Department of Natural Resources

U.S. Department of the Interior
- U.S. Fish and Wildlife Service
- Bureau of Land Management
- National Park Service

VI. Authorities

The signatory parties enter into this Agreement under Federal and State laws, regulations, and policies.

The Alaska Department of Natural Resources enters into this agreement under the authority of Alaska Statutes AS 38.05.020 pertaining to land management and AS 38.05.180 as it applies to oil and gas leasing and placing conditions on drilling or development contracts. The Alaska Department of Fish and Game enters into this agreement under the authority of AS 16.05.050. Both ADNR and ADFG enter into this agreement in accordance with AS 36.30.850(c).

As part of the Dept. of the Interior, BLM enters into this agreement because a large proportion of YBLO breed within NPR-A. The Naval Petroleum Reserves Production Act (NPRPA) is applicable, which directs the Secretary of the Interior to "assume all responsibilities for any activities related to the protection of environmental fish and wildlife, and historical or scenic values" (42USC § 6503(b)) in NPR-A. Also, BLM Sensitive Species in Alaska are designated by the state director and are protected, at a minimum, by the policy described for candidate species. This policy states that BLM shall carry out management, consistent with the principles of multiple use, for the conservation of candidate species and their habitats and shall ensure that actions authorized, funded, or carried out do not contribute to the need to list any of the species as threatened or endangered (BLM Manual Section 6840.06 C).

The USFWS enters into this agreement under the Migratory Bird Treaty Act, which makes it unlawful to take migratory birds, their nests, and eggs except under regulations promulgated by the USFWS to accommodate legitimate use (16USC § 703-711).

The NPS enters into this agreement because the 1980 Alaska National Interest Lands Conservation Act (ANILCA) contains enabling legislation and mandates relevant to YBLO conservation for the Western Arctic National Parklands, including Bering Land Bridge National Preserve and Cape Krusenstern National Monument. Management purposes include protection of "habitat for internationally significant populations of migratory birds" in Bering Land Bridge National Preserve (ANILCA § 201(2)); and protection of "habitat for, and populations of, birds" in Cape Krusenstern National Monument (ANILCA § 201(3)).

The Endangered Species Act (Act) may be relevant to this Agreement in the future. Section 2(c)(1) of the Endangered Species Act (Act), (16 U.S.C. § 1531 (c)(1)) states "the policy of Congress is that all Federal departments and agencies shall seek to conserve endangered and threatened species and shall utilize their authorities in furtherance of the purposes" of the Act.

VII. Yellow-billed Loon Status and Distribution

There are an estimated 16,000 YBLO worldwide. Approximately 3,300 YBLO breed in the freshwater treeless tundra of Alaska. They breed abundantly on the North Slope, and sparsely in western Alaska north of Unalakleet and the foothills of the Brooks Range. Yellow-billed loons nest exclusively in coastal and inland low-lying tundra from 62-74° N latitude, in association with permanent, fish-bearing lakes. Breeding is thought to be limited primarily by availability of breeding habitat, specifically nesting and brood-rearing lakes (North 1994). Lakes that support breeding loons are large (at least 13.4 ha (33 acres) (North & Ryan 1988); have abundant fish populations, clear water, depths greater than 2 m (6.5 feet), and water under the ice during winter; are connected to streams which may supply fish; are highly convoluted, vegetated, and have low-lying shorelines; and have dependable water levels (Earnst et al. 2005, North 1994). Breeding lakes may be near but not connected to major rivers, possibly because fluctuating river water levels can flood nests or cause turbidity that compromises foraging success.

Because breeding habitats are patchily and sparsely distributed across the YBLO's range, breeding birds are found in clumped and concentrated distributions. Based on data from the 1998-2001 USFWS Alaska Coastal Plain (ACP) and North Slope Eider (NSE) aerial surveys most of the Alaskan breeding population occurred within six concentration areas (i.e., areas with > 11 individuals/10,000 ha or 25,000 acres). These concentrations areas encompassed 84 percent of sightings in only 15 percent of the surveyed area. The largest concentration area was between the Meade and Ikpikpuk Rivers and encompassed 30 percent of YBLO sightings in only 5 percent of the surveyed area; other notable concentrations were on the Colville River Delta and west, southwest, and east of Teshekpuk Lake.

Marine habitats in Alaska are important for non-breeding, migrating and wintering YBLO. Non-breeders (e.g., young or inexperienced adults) may migrate to breeding areas, but spend time

foraging in large rivers and the nearshore marine environment. Yellow-billed loon migration routes are thought to be primarily marine, sometimes far offshore depending upon ice conditions (North 1994). The YBLO winters in marine waters around the North Pacific from Puget Sound to the Yellow Sea. Specific characteristics of wintering habitats are not well known, but the species normally occurs in protected nearshore marine waters.

VIII. Conservation Concerns

Yellow-billed loons are long-lived, with low reproductive potential, and Alaska's breeding population of YBLO is small, with probably fewer than 1000 pairs attempting to breed in any given year. These inherent population characteristics likely make Alaska's YBLOs vulnerable to and slow to recover from population perturbations (Earnst 2004). Further, population growth and maintenance in YBLO or similar species are most sensitive to factors that affect adult survival, such as oil spills, contaminants, subsistence harvest, fisheries bycatch, or disease. However, population declines due to reduced reproduction or recruitment could also affect YBLO (Earnst 2004). Major threat categories in Earnst's (2004) Status Assessment include habitat loss on the breeding ground and predation of young due to an increase in predators associated with resource development (NRC 2003). There are few specific data on these threats for any loon species, especially YBLO. However, given loon ecology and current and projected development, especially in breeding habitats on the North Slope, these threats are occurring or expected to occur and may have substantial effects on YBLO in Alaska.

Adult mortality, to which YBLO populations are sensitive, can occur through bycatch in subsistence fisheries and through subsistence harvest. Gillnets are widely used in rural Alaska fisheries, particularly for whitefish (Coregonids), char (*Salvelinus spp.*) and other fish that occur in YBLO habitats. Loons, including YBLO, forage in large rivers that support important subsistence fisheries such as the Meade, Ikpikpuk, and Colville, and an unknown number are caught incidentally every year. Yellow-billed loons are customary and traditional subsistence resources, and used for food and ceremonies. Perhaps 350 YBLO are harvested annually either in summer on the North Slope breeding grounds or during spring and fall migration along the west coast of Alaska (C. Wentworth, USFWS, pers. comm.), although some migrants harvested in western Alaska may be Russian breeders. The magnitude and impact of subsistence harvest on Alaska's YBLO is unknown because harvest surveys have not been done consistently (including species identification) over time and in all relevant areas of YBLO range.

Habitat loss on the breeding grounds can result from industrial infrastructure development such as pads, gravel and ice roads, pipelines, and airstrips. These may make breeding habitat unsuitable for YBLO directly by placing fill in wetlands or indirectly through disturbance, hydrology alterations, or thermokarst action. Additionally, oil spills associated with petroleum development, village fuel supplies, and vessel traffic could impact breeding and brood-rearing lakes, and rivers or coastal areas where non-breeders forage. There are no laws that specifically protect YBLO habitats, although numerous Federal and State laws and regulations that govern land uses and development serve to directly or indirectly benefit loons and their habitat. Further, project-specific prescriptions to protect specific resources (e.g., YBLO) or habitat types (e.g.,

deep water lakes) are called for in the RODs that facilitate development in NPR-A, and implementation of these prescriptions are legal requirements.

IX. Conservation Strategies and Actions

The conservation strategies address land management activities stemming from resource development, population monitoring in all areas where YBLO occur, reducing significant impacts of subsistence harvesting or bycatch, and basic and applied research to both supplement knowledge and determine efficacy of protective management actions.

Land management in northern Alaska, particularly NPR-A and the Colville River Delta, may affect significant numbers of YBLO due to the widespread scale of potential development and significant overlap between oil and gas potential and YBLO breeding distribution. The actions called for in this strategy primarily focus on long-term nesting habitat protection and reducing disturbance to nesting birds through adoption and enforcement of protective lease stipulations, required operating procedures, and management practices. Since most YBLO in western Alaska nest in areas with a comparatively stable and protective land management regime (e.g., National Park lands and a National Wildlife Refuge), the species' conservation there will benefit from documentation of distribution, abundance, and population trends, and periodic evaluation of threats. Evaluating the potential impact of subsistence harvest and incidental bycatch includes accurate assessment of current harvest rates, hunter education, and, if warranted by harvest data, working in cooperation with subsistence users to develop methods of reducing incidental bycatch in fishing nets and harvest. Finally, each of these strategies includes actions that may be described as research or monitoring. However, so little is known about YBLO, or about how management actions may affect them, that additional listing of research and monitoring needs is warranted. Periodic re-evaluation of this agreement by the involved parties will help to assess data gaps, efficacy of management actions, and emerging threats. The final conservation strategy includes a listing of research and monitoring needs with agreement to periodically assess and work towards funding these.

Strategy 1: Implement specific actions to protect YBLO and their habitats from potential impacts of land uses and management activities, including oil and gas exploration and development.

Objective: Ensure that land management practices in NPR-A do not contribute to YBLO becoming threatened or endangered with extinction.

The NPR-A was initially created in 1923 by President Harding as the Naval Petroleum Reserve Number 4. For more than 50 years following the designation, the Navy and the U S Geological Survey conducted petroleum exploration in the region. There were 136 known wells drilled in NPR-A during that time. In 1976 the NPRPA was signed authorizing development of the reserve. In addition, the NPRPA transferred management of the reserve to the Secretary of the Interior and renamed it the National Petroleum Reserve-Alaska.

In 1982 the first lease sales for NPR-A were offered. Leasing has continued at irregular intervals since. A series of EISs and Integrated Activity Plans (IAPs) have been completed to evaluate and guide leasing and any resultant development activities. Seventeen exploration wells have been completed under the various lease sales. No permanent oil or gas development has occurred to date within NPR-A boundaries, although the Alpine Satellite Development EIS conducted under the 1998 NE NPR-A EIS/IAP (USDOI/BLM 2005) authorizes three satellite developments west of the Colville River, and initiation of these projects is expected in 2006.

Early exploration included summer drilling and overland moves with detrimental, and in some cases lasting, impacts on the environment. The impact to loons from early exploration is unknown. Subsequent exploration was conducted in winter, with drilling from temporary ice pads and ice roads. There is no evidence to suggest that current modern winter exploration activities impact loons. Ice roads and pads are located away from rivers and lakes, except for perpendicular crossings of rivers and access roads for water withdrawal.

Activities associated with exploration and proposed and potential development of petroleum resources within the reserve could have a variety of effects on loons. BLM will implement Required Operating Procedures (ROPs) and Stipulations from the NE NPR-A Amendment and NW NPR-A Records of Decision (RODs). Specific habitat protection for nesting loons is provided by ROP E-11 in both RODs. In the NE (most recent) ROD, E-11 was changed to provide additional specificity, and reads:

> Objective: Minimize the take of species listed under the Endangered Species Act and minimize the disturbance of other species of interest from direct or indirect interaction with oil and gas facilities.
>
> Requirement/Standard: In accordance with the guidance below, before the approval of facility construction, aerial surveys of breeding pairs of the following species shall be conducted within any area proposed for development.

then, under Special Conditions in Yellow-billed Loon Habitats:

> Aerial surveys shall be conducted by the lessee for at least 3 years before authorization of construction of facilities proposed for development which are within 1 mile[1] of a lake 25 acres (10 ha) or larger in size. These surveys along shorelines of large lakes shall be conducted following accepted BLM protocol during nesting in late June and during brood rearing in late August.
>
> Should yellow-billed loons be present, the design and location of facilities must be such that disturbance is minimized. The default, standard mitigation is a 1-mile buffer around all recorded nest sites and a minimum 1,625-foot[2] buffer around the remainder of the shoreline. Development will generally be prohibited within buffers unless no other option exists.

[1] 1 mile = 1.6 kilometers (km)
[2] 1,625 feet = 495 m

BLM will implement ROPs and Stipulations from the NE NPR-A and NW NPR-A RODs. Specific habitat protection for nesting loons is provided by ROP E-11 in both RODS. The language of E-11 was changed from the NW ROD in the NE ROD to provide additional specificity. BLM will implement E-11 in NW ROD consistent with the language in the NE ROD. Other ROPs and Stipulations that would provide potential habitat protection, although not specific to YBLO, through application of buffers, within which development activity would be prohibited or limited, include: A-5, E-2, K-1, K-2, K-3 and K-6 (Appendix 1).

No Integrated Activity Plan has been developed for the South Planning Area of NPR-A and few loons are known to occur in the South Planning Area; However, BLM will apply E-11 and other applicable ROPs and Stipulations to individual activities that would occur in areas potentially occupied by loons.

The NE and NW RODs require monitoring of ROP and Stipulation implementation. During preparation of specific development plans and the accompanying NEPA document(s) monitoring plans specific to the site conditions will be developed and implemented. Monitoring activities will also be defined and determined at that time. Monitoring will be used to determine if ROPs/Stipulations are performing as intended and inform decision-makers of any changes to BLM ROPs and Stipulations necessary to provide the intended benefits to loons.

Pre-development surveys required by ROP E-11 and monitoring required in development specific permits and associated NEPA documents will result in intensive surveys and data collection. BLM will work with FWS to ensure that survey methodology and data collection are as compatible as possible with the larger population level survey efforts.

BLM will assess methods for pre-development surveys required by ROP E-11 and any subsequent post-development monitoring required by development permits for efficacy and refine them as information becomes available either through actual development surveys or other research efforts.

BLM will continue its program of research and monitoring related to water withdrawal for ice road and pad construction. Specific facets include water chemistry change and recharge. The current program is conducted in conjunction with Alaska Department of Natural Resources.

Strategy 1 (cont.): Implement specific actions to protect YBLO and their habitats from potential impacts of land uses and management activities, including oil and gas exploration and development.

Objective: Ensure that land management practices on the Colville River Delta do not contribute to YBLO becoming threatened or endangered with extinction.

In contrast to NPR-A where habitats used by YBLO are managed primarily by BLM, lands on the Colville River Delta are owned and managed primarily by the State of Alaska and Alaska Native corporations. Thus, conservation needs for YBLO on the delta are addressed separately in this Agreement.

The Colville River Delta has been recognized as a breeding area for YBLO (Derksen et al. 1981; North and Ryan 1988) that hosts relatively high densities compared to elsewhere on the North Slope (Rothe et al. 1983; Field et al. 1993). The number of breeding pairs in the delta was estimated in the range of 34-46 (North 1986; North 1993). Intensive ground surveys located 19 nests in 1983 and 20 nests in 1984 (North 1986). More recent aerial surveys of the delta located 23 nests in 1998 and 24 nests in 2003 (Johnson et al. 2004). In 2003, 16 of 24 nests and 10 of 14 broods were found north of the Alpine facility, with the rest to the south (Johnson et al. 2004).

The delta is composed of diverse wetland types, including river distributaries, tapped lakes, deep clear-water lakes, and a variety of pond types that meet the needs of YBLO for breeding, broodrearing, and staging (North and Ryan 1989; Earnst et al. 2005).

Most of the delta has been leased for oil and gas development in a series of state lease sales since 1964. Additional delta leases may be offered through 2008 and beyond as part of the North Slope Areawide Sale. Other than exploration activity, the first major petroleum development in the delta began with the discovery of the Alpine oilfield in winter of 1994. The initial infrastructure included two pads (CD-1, CD-2) with wells, a production facility, and an airfield. Production at Alpine began in 2000 and, by November, ConocoPhillips Alaska Inc. began the process to develop two satellite developments on the delta, north (CD-3 Fjord) and south (CD-4 Nanuq) of the Alpine base. These satellite developments are currently under construction.

Conservation strategies for YBLO on the Colville Delta will need to be implemented in the context of extensive oil and gas leases that are in effect and the approved infrastructure of Alpine. Current and near-future developments will be planned and regulated under the terms and conditions of the North Slope Areawide Lease Sale. Further mitigation and protection may be implemented through permitting processes for specific facilities and through review and approval of plans of operation.

The Alaska Departments of Natural Resources and Fish and Game will promote measures to protect habitat and avoid impacts to YBLO primarily by implementing Mitigation Measures and Lessee Advisories for the North Slope and Beaufort Sea Areawide Lease Sales (Appendix B).

Strategy 2: Inventory and monitor YBLO populations, including areas that do not have development concerns.

Objectives: Start, continue and improve inventory and monitoring efforts in primary YBLO breeding areas and in western Alaska.

The USFWS conducts annual aerial waterfowl surveys on the Alaska's North Slope. Yellow-billed loons are also counted during these surveys, although they are not designed specifically to measure YBLO population size or trends. The USFWS, BLM, and State will work cooperatively with other partners to fund YBLO-specific surveys in high-density breeding areas.

YBLO that nest in western Alaska occur primarily in areas that are not subject to significant industrial development, such as National Park and National Wildlife Refuge lands. Short-term conservation needs for YBLO in this region, therefore, focus on refining understanding of the species' distribution and abundance, and monitoring trends in status and threats.

Western Arctic National Parklands – The National Parks of Western Alaska may have the largest number of YBLO on lands that are not open to development. Conservation efforts to date have included cooperative investigations and surveys with other agencies such as USFWS and USGS. However, YBLO may be monitored as part of the National Park Service's Inventory and Monitoring program in the Arctic Network, which includes Bering Land Bridge National Preserve and Cape Krusenstern National Monument.

Selawik National Wildlife Refuge - Although few YBLO have been documented on Selawik National Wildlife Refuge in northwestern Alaska, the species is occasionally observed there. Selawik NWR staff has and will continue to report all sightings of YBLO observed during aerial surveys for other species, including a periodic scoter breeding survey in late June. Selawik NWR partners with USFWS Migratory Bird Management (MBM) to survey the Seward Peninsula, lower Noatak River, and Selawik NWR.

Strategy 3: Determine the impact of subsistence activities (fisheries bycatch and harvest).

Objective: Measure and reduce the number of YBLO incidentally caught in subsistence fisheries.

Observations indicate that YBLO are caught inadvertently in subsistence fishing nets but the extent of mortality and its geographic distribution remain poorly documented. For example, USFWS personnel have been told that YBLO are routinely and unavoidably caught in subsistence nets in the Ikpikpuk River (C. Roberts, USFWS, pers. comm.). Possession of inadvertently caught YBLO was permitted by federal hunting regulations, beginning in 2005. These regulations allow up to 20 YBLO inadvertently caught in subsistence fishing nets in the North Slope Region to be kept for subsistence use, and require that fisherman report their catch of YBLO to the North Slope Borough, Dept. of Wildlife Management (NSB-DWM) by the end of the season (50 CFR 92.33).

The NSB's reports will improve our understanding of the extent and distribution of YBLO by-catch. In the event that reports or other sources of information show that by-catch poses a population-level risk to YBLO, USFWS and ADFG will partner with the NSB-DWM to work with subsistence fisherman in affected areas to experiment with bycatch reduction methods. Thus, at this time, the only task necessary is to develop and implement outreach efforts to notify North Slope fishermen that accurate reporting of by-catch of YBLO in subsistence nets is important and carries no penalties. This will require cooperative efforts by the USFWS and ADFG, in partnership with the NSB-DWM.

Strategy 3 (cont.): Determine the impact of subsistence activities (fisheries bycatch and harvest).

Objective: Measure and reduce the number of YBLO taken by subsistence hunters.

Spring/summer subsistence hunting of migratory birds in Alaska is now managed under federal regulations (50 CFR 92) developed through the Alaska Migratory Bird Co-Management Council (AMBCC), which includes representatives from rural subsistence regions, ADFG, and USFWS as equal partners. Twelve regional management bodies were created to provide crucial local input to the Council in developing the open-season bird list, regional hunting season dates, methods and means, and other annual regulatory recommendations. During establishment of the first spring and summer subsistence regulations, the USFWS recognized special conservation concerns for YBLO (small population and potential threats) and did not open a hunting season on the species for the 2003 season (68 FR 43023). The species has not been on the open-season list in subsequent years (69 FR 17328, 70 FR 18249).

The most recent available subsistence harvest surveys indicate that approximately 350 YBLO are taken every year throughout Alaska (C. Wentworth, USFWS, pers. comm.), although the accuracy of this estimate is compromised by incomplete surveys across the breeding range and inconsistent species-level data collection. Further, much of the available information may be out of date; villages along the northwest Alaska coast, where YBLO are taken in marine waters during migration, were last surveyed in 1997. Additionally, some YBLO taken in western Alaska during migration may be from populations that nest in Russia or Canada, whereas this Agreement is intended to address the conservation of YBLO that nest in Alaska. At this time, therefore, we cannot accurately assess the impacts of subsistence hunting to YBLO in northern and western Alaska.

Actions necessary to reduce subsistence hunting of YBLO will consist of two components. First, an accurate assessment of harvest patterns must be developed to evaluate potential impacts of subsistence harvest to YBLO, and to identify areas where harvest continues. Second, outreach efforts are needed to establish a common understanding among northern and western Alaska residents about the status of YBLO, the basis for conservation concerns, and that hunting the species is not allowed. General, broad-scale outreach efforts will be started concurrently with harvest survey efforts, and outreach strategies will be refined and geographically focused as necessary.

An assessment of current harvest patterns will require a thorough harvest survey of subsistence hunters in northern and western Alaska. This survey was started in 2005, when the NSB surveyed hunters on the North Slope and Kawerak, Inc. surveyed hunters in the Bering Straits region of western Alaska. This will be followed by surveys in the Northwest Arctic Region by Maniilaq, Inc. in 2006. Data from these regional surveys will be synthesized and evaluated by the AMBCC Harvest Survey Committee and shared among all interested parties.

In addition to surveying hunters about current harvest of YBLO, outreach efforts to reduce subsistence harvest of YBLO will require the development and dissemination of materials explaining the status of YBLO, eliciting local knowledge, discussing factors affecting YBLO conservation, and encouraging cooperative efforts with regional and village organizations. This

will require cooperative efforts by ADFG, NSB, and USFWS, and potential partners including the AMBCC.

Finally, to eliminate any continuing hunting of YBLO, a message to hunters explaining why YBLO are not available for harvest will be developed and disseminated by ADFG, NSB, and USFWS.

Strategy 4: Conduct biological research on YBLO.

Objectives: Periodically evaluate and work towards funding YBLO research and monitoring, including population surveys and evaluation of protective management prescriptions.

Below is a listing of needed monitoring and research tasks to facilitate inter-agency cooperation on funding and evaluation of YBLO monitoring and research. Although they are not currently ranked, annual meetings will provide an opportunity for signatories and others to evaluate and prioritize these needs.

In January of 2004, the FWS and BLM convened a meeting of loon experts to provide guidance on how to conserve YBLO on BLM lands in arctic Alaska, particularly NPR-A, and to provide additional information for this Conservation Agreement. Experts were asked to list research and monitoring needs for YBLO, particularly in the face of oil and gas development in NPR-A. Many were reflective of those listed in the Status Assessment (Earnst 2004), but others provide additional insight, including:

Monitoring:

1. Monitor fish passage through stream crossings of roads
2. Conduct aerial surveys over proposed ice road corridors for 3 years and in high-density loon areas in advance of leasing and development
3. Add all known nest locations to habitat models
4. Maintain, improve, and institutionalize the existing YBLO registry

Research:

1. Examine YBLO prey fish recruitment in North Slope lakes
2. Test whether water withdrawals affect YBLO prey fish populations
3. Test whether water withdrawals affect *Arctophila* beds and other emergent vegetation, important for brood-rearing habitat
4. Test for relationships between adult mortality and road density
5. Determine YBLO survival rates, fidelity, within-season dispersal using marked birds
6. Determine best time and places to survey breeding and non-breeding populations to develop a population monitoring plan
7. Study factors affecting productivity across multiple geographic areas, focusing on areas to be developed plus with control areas; include predation
8. Study effects of disturbance; include effectiveness of buffers and different buffer widths
9. Determine whether there are discrete populations through telemetry or genetic marking
10. Establish contaminant loads and pathways

11. Study food habits and diet
12. Obtain information on sub-adult population distribution
13. Investigate relationship between roads and invasive species (e.g. pike, plants)
14. Obtain retrovirus baseline

The Status Assessment and Conservation Plan for the Yellow-billed Loon (Earnst 2004) provides a detailed listing of monitoring and research needs, briefly summarized below. Research on wintering areas is also emphasized, but is outside the scope of this agreement.

1. Continue current breeding surveys; add YBLO-specific surveys such as lake-circling pair and brood surveys to monitor productivity;
2. Marine surveys in southern and northern Alaska during breeding season to measure the non-breeding population;
3. Monitor subsistence harvest and bycatch;
4. Research on breeding ecology and demography, including refining population models;
5. Conduct ground-based habitat research, e.g. determine fish species and abundance in breeding lakes;
6. Conduct research effects of anthropogenic disturbance, e.g. habitat avoidance, foraging efficiency, or productivity in face of infrastructure development.

The FWS, BLM, and ADFG will work with the NSB, the North Slope Science Initiative, the oil industry, and other partners to acquire adequate funding for YBLO research and monitoring priorities.

X. Conservation Schedule

Strategy 1: Implement specific actions to protect YBLO and their habitats from potential impacts of land uses and management activities, including oil and gas exploration and development.

Conservation in NPR-A: The ROD for NW NPR-A IAP/EIS (USDOI/BLM 2003) was signed 22 January 2004. The ROD for the amended NE NPR-A IAP/EIS was signed January 11, 2006. All permitted actions within NPR-A will comply with the applicable ROPs and stipulations.

Conservation on the Colville River Delta: Mitigation measures, advice to lessees, and planning procedures are in place through the North Slope Areawide Lease Sale (initiated in 1999) and Beaufort Sea Areawide Lease Sale (initiated in 2000).

Strategy 2: Inventory and monitor YBLO populations, even in areas which do not have development concerns.

Inventory and monitoring in primary YBLO breeding areas: Continue counts of YBLO during FWS aerial waterfowl surveys, and work towards implementing YBLO-specific surveys.

Conservation in Western Alaska: Aerial surveys on Selawik NWR will be conducted for the foreseeable future. The Western Alaska Parklands YBLO-specific survey was conducted in

spring, 2005. Those data will be available in 2006, as will evaluation of the potential for future surveys.

Strategy 3: Determine the impact of subsistence activities (fisheries bycatch and harvest).

Incidental Bycatch in Fishing Nets: Outreach and education materials to reduce bycatch in fishing nets will be developed and delivered by Spring, 2006.

Subsistence Harvest: Date from harvest surveys conducted in 2005 will be synthesized and evaluated in early 2006. Outreach and education materials for hunters will be developed and delivered by Spring, 2006.

Strategy 4: Conduct biological research on YBLO.

Signatory agencies will work towards funding research, and meet annually to assess research and monitoring needs.

XI. Duration and Amendment of Agreement

Long-term protection and management, as outlined in this Agreement, are necessary for the conservation of the YBLO. The initial term of this Agreement shall be ten (10) years, and shall be extended for additional five (5) year increments upon agreement by the parties until long-term habitat protection and conservation of the YBLO is assured. This agreement may be amended at any time by mutual consent of all parties.

XII. National Environmental Policy Act (NEPA) Compliance

Signing of this Agreement is covered under the authorities outlines in Section VI, above. We anticipate that any monitoring or research activities initiated for implementation and maintenance of this Agreement will not entail significant Federal actions under the NEPA and will be given a categorical exclusion designation. All actions will be evaluated prior to implementation and will comply with NEPA regulations.

XIII. Literature Cited

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XIV. Responsibilities of the Parties

To meet the goals and objectives of this Yellow-billed Loon Conservation Agreement, the parties agree to undertake their respective responsibilities and conservation measures set for herein. Where responsibility for undertaking specific future action has not been assigned or become apparent during scheduled reviews, the parties agree to implement such measures through addendums or revisions to this agreement.

IN WITNESS HEREOF, THE PARTIES HERETO have, as of the last signature date below, executed this Conservation Agreement.

Henri Bisson, State Director, Bureau of Land Management — Date
Alaska State Office
222 W. 7th Avenue, #13
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907-271-4596, Henri_R_Bisson@ak.blm.gov

Rowan Gould , Regional Director, U.S. Fish and Wildlife Service — Date
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907-786-3542, Rowan_Gould@fws.gov

Mike Menge, Commissioner, Alaska Dept. of Natural Resources — Date
550 W. 7th Avenue, Suite 1400
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907-269-8431, Mike_Menge@dnr.state.ak.us

McKie Campbell, Commissioner, Alaska Dept. of Fish and Game — Date
1255 W. 8th Street
Juneau, Alaska 99811-5526
907-465-4100, McKie_Campbell@fishgame.state.ak.us

Marcia Blaszak, Regional Director, National Park Service — Date
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907-644-3510, Marcia_Blaszak@nps.gov

APPENDIX A. Required operating procedures and lease stipulations from NPR-A RODs that, while not specific to yellow-billed loons, may provide protection during the course of oil and gas exploration and development.

A-5 (Required Operating Procedure)

Objective: Minimize the impact of contaminants from refueling operations on fish, wildlife, and the environment.

Requirement/Standard: Refueling of equipment within 500 feet of the active flood plain of any fish-bearing water body and 100 feet from non-fish-bearing water bodies is prohibited. Small caches (up to 210 gallons) for motorboats, float planes, ski planes, and small equipment, e.g. portable generators and water pumps, will be permitted. The AO may allow storage and operations at areas closer than the stated distances if properly designed to account for local hydrologic conditions.

E-2 (Lease Stipulation)

Objective: Protect fish-bearing water bodies, water quality, and aquatic habitats.

Requirement/Standard: The design and location of permanent oil and gas facilities within 500 feet of fish-bearing or 100 feet of non-fish-bearing waterbodies will only be approved on a case by case basis if the lessee can demonstrate that impacts to fish, water quality, and aquatic and riparian habitats are minimal. Note: Also refer to Area-Specific Stipulations and ROPs for Rivers Area (Lease Stipulation K-1) and Deep Water Lakes (Lease Stipulation K-2).

K-1 (Lease Stipulation – Rivers Area)

Objective: Minimize the disruption of natural flow patterns and changes to water quality; the disruption of natural functions resulting from the loss or change to vegetative and physical characteristics of floodplain and riparian areas; the loss of spawning, rearing or over-wintering habitat for fish; the loss of cultural and paleontological resources; the loss of raptor habitat; impacts to subsistence cabin and campsites; the disruption of subsistence activities; and impacts to scenic and other resource values.

Requirement/Standard: Permanent oil and gas facilities, including gravel pads, roads, airstrips, and pipelines, are prohibited in the streambed and adjacent to the rivers listed below at the distances identified. With the exception of the Ikpikpuk River, these setbacks are measured from the bank of the river as determined by the hydrology at the time of application. The standard setback is ½ mile (from the bank's highest high water mark) and increased to ¾ mile (from the bank's highest high water mark) where subsistence cabin and campsites are numerous. Along the Colville River and a portion of the Ikpikpuk a 1-mile (from the bank's highest high water mark) setback is required to protect important raptor habitat. On a case-by case basis, and in consultation with federal, state, and NSB regulatory and resource agencies (as appropriate, based on agency legal authority and jurisdictional responsibility), essential pipeline and road crossings to the main channel will be permitted (unless noted otherwise) through setback areas. The above setbacks may not be practical within river deltas. In these situations, permanent facilities shall be designed to withstand a 200-year flood event.

a. Colville River: a 1-mile setback from the northern bluff (or bank if there is no bluff) Colville River extending the length of that portion of the river located within the Planning Area for the purposes of Raptor Protection. Note: The Planning Area excludes conveyed Native lands along the lower reaches of the Colville River. Development of road crossings intended to support oil and gas activities shall be consolidated with other similar projects and uses to the maximum extent possible. Note: This provision does not apply to intercommunity or other permanent roads constructed with public funds for general transportation purposes. This preserves the opportunity to plan, design, and construct public transportation systems to meet the economic, transportation, and public health and safety needs of the State of Alaska and/or communities within the National Petroleum Reserve – Alaska.
b. Ikpikpuk River: (those portions of the river within the Northeast Planning Area and east of the river centerline)
    - A ¾-mile setback, as measured from the river centerline east, is required from the mouth of the Ikpikpuk River extending south to northern limit of Section 19, Township 7 North, Range 11 West, U.M. (Umiat Meridian). This is to protect numerous subsistence cabins and campsites.
    - A 1-mile setback, as measured from the river centerline east, is required from the northern boundary of Section 19, Township 7 North, Range 11 West, U.M., extending south to the northern limit of Section 4, Township 3 North, Range 12 West, U.M. This setback is for the purposes of protecting Raptors.
c. Miguakiak River: A ½ mile setback, as measured from the bank's highest high water mark is required along its entire length.
d. Kikiakrorak and Kogosukruk Rivers: Note: The following discussion refers only to portions of the Kikiakrorak River downstream from the north line of Township 2 North, Range 4 West, U.M. and the Kogosukruk River (including the four tributaries off the southern bank) downstream from the north line of Township 2 North, Range 3 West, U.M. No permanent oil and gas surface facilities, except essential transportation crossings, will be allowed within 1 mile of the top of the bluff (or highest high water mark on the bank if there is no bluff) on either side of the rivers and the four identified tributaries of the Kogosukruk River.
e. Fish Creek: A 3 mile setback, as measured from the bank's highest high watermark, is required along that portion of the creek extending downstream from the east line of Section 31, Township 11 North, Range 1 East, U.M. and a ½ mile setback, as measured from the bank's highest high water mark, is required along that portion of the creek extending farther upstream. The purpose of this setback is to preclude location of permanent oil and gas surface facilities with the exception of essential transportation crossings.
f. Judy Creek (in the Planning Area): No permanent oil and gas surface facilities, except essential transportation crossings, will be allowed within ½ mile (from the bank's highest high water mark) of these waterbodies.
g. Tingmiaksiqvik River (identified as the Ublutuoch River on USGS quadrangle maps): No permanent oil and gas surface facilities, except essential transportation crossings, will be allowed within ½ mile (from the bank's highest high water mark) of this river from the eastern edge of Section 22, Township 8 North, Range 1 East U.M. (the western boundary of the CRSA) downstream to the confluence with Fish Creek

K-2 (Lease Stipulation - Deep Water Lakes)

Objective: Minimize the disruption of natural flow patterns and changes to water quality; the disruption of natural functions resulting from the loss or change to vegetative and physical characteristics of deep water lakes; the loss of spawning, rearing or over wintering habitat for fish; the loss of cultural and paleontological resources; impacts to subsistence cabin and campsites; and the disruption of subsistence activities.

Requirement/Standard: Generally, permanent oil and gas facilities, including gravel pads, roads, airstrips, and pipelines, are prohibited on the lake or lakebed and within ¼ mile of the ordinary high water mark of any deep lake as determined to be in lake zone III (i.e., depth greater than 13 feet [4 meters]; Mellor 1985). On a case-by case basis, and in consultation with federal, state and NSB regulatory and resource agencies (as appropriate based on agency legal authority and jurisdictional responsibility), essential pipeline, road crossings, and other permanent facilities may be considered through the permitting process in these areas where the lessee can demonstrate on a site-specific basis that impacts would be minimal or if it is determined that there is no feasible or prudent alternative. Please see discussion regarding BLM's permitting/authorization process, Section 2.6.2.

K-3 (Lease Stipulation - Teshekpuk Lake Shoreline)

(Note: Under the Proposed Action Teshekpuk Lake would be deferred from additional oil and gas leasing for a period of 10 years).

Objective: Minimize the disruption of natural flow patterns and changes to water quality; the disruption of natural functions resulting from the loss or change to vegetative and physical characteristics of this large and regionally significant deep water lake; the loss of cultural and paleontological resources; impacts to subsistence cabins, campsites and associated activities; and to protect fish and wildlife habitat including important insect relief areas.

Requirement/Standard: Permanent oil and gas facilities, including gravel pads, roads, airstrips, and pipelines, are prohibited within ¼ mile of the ordinary high water mark of Teshekpuk Lake – No Exceptions.

K-6 (Lease Stipulation - Coastal Area)

Objective: Minimize hindrance or alteration of caribou movement within caribou coastal insect-relief areas; to prevent contamination of marine waters; loss of important bird habitat; alteration or disturbance of shoreline marshes; and impacts to subsistence resources activities.

Requirement/Standard: In the Coastal Area, permanent oil and gas facilities, including gravel pads, roads, airstrips, and pipelines established to support exploration and development activities shall be located at least ¾ mile inland from the coastline to the extent practicable. Where, as a result of technological limitations, economics, logistics, or other factors, a facility must be located within ¾ mile inland of the coastline, the practicality of locating the facility at previously occupied sites such as Camp Lonely, various Husky/USGS drill sites, and Distant Early Warning (DEW)-Line sites, shall be considered. Use of existing sites within ¾ mile of the coastline shall also be acceptable where it is demonstrated that use of such sites will reduce impacts to shorelines or otherwise be environmentally preferable. All lessees/permitees involved in

activities in the immediate area must coordinate use of these new or existing sites with all other prospective users. Before conducting open water activities, the lessee shall consult with the Alaska Eskimo Whaling Commission, the Nuiqsut Whaling Association, Barrow Whaling Captains Association, and the NSB to minimize impacts to the fall and spring subsistence whaling activities of the communities of the North Slope.

APPENDIX B: State of Alaska North Slope and Beaufort Sea Areawide 2004 Competitive Oil and Gas Lease Sales, Mitigation Measures and Lessee Advisories

The following provisions, excerpted from lease sale mitigation measures, are only those that are specifically relevant to conservation of yellow-billed loons. The full documents contain many more general requirements and procedures of the state that apply to planning and approval of petroleum developments on the North Slope.

General Measures (Water Removal)

3. a. Removal of water from fishbearing rivers, streams, and natural lakes shall be subject to prior written approval by DMWM and ADF&G.

   b. Removal of snow cover from fishbearing rivers, streams, and natural lakes shall be subject to prior written approval by ADF&G. Compaction of snow cover overlying fishbearing waterbodies will be prohibited except for approved crossings. If ice thickness is not sufficient to facilitate a crossing, ice and/or snow bridges may be required.

4. Water intake pipes used to remove water from fishbearing waterbodies must be surrounded by a screened enclosure to prevent fish entrainment and impingement. Screen mesh size shall not exceed 0.04 inches unless another size has been approved by ADF&G. The maximum water velocity at the surface of the screen enclosure may be no greater than 0.1 foot per second.

Specific Measures

19. Birds: Permanent, staffed facilities must be sited to the extent feasible and prudent outside identified brant, white-fronted goose, snow goose, tundra swan, king eider, common eider, Steller's eider, spectacled eider, and yellow-billed loon nesting and brood rearing areas.

21. Waterbody Buffers:
    a. To the extent feasible and prudent, onshore facilities other docks, or road and pipeline crossings, will not be sited within 500 feet of fishbearing streams. Additionally, to the extent feasible and prudent, facilities will not be sited within one-half mile of the banks of the main channel of the Colville, Canning and Sagavanirktok, Kavik, Shaviovik, Kadleroshilik, Echooka, Ivishak, Kuparuk, Toolik, Anaktuvuk and Chandler Rivers. Facilities will be not be sited within 500 feet of all other fishbearing waterbodies. Essential facility siting will be allowed in buffer areas in those instances where no other suitable sites are available. Facilities will not be sited within buffers unless the Director, after consulting ADF&G, determines that such facility restrictions are not feasible or prudent. Road and pipeline crossings must be aligned perpendicular or near perpendicular to watercourses.

    b. No facilities will be sited within one-half mile of identified Dolly Varden overwintering and/or spawning areas on the Canning, Shaviovik, and Kavik rivers. Notwithstanding the previous sentence, road and pipeline crossings may only be sited within these buffers if the lessee demonstrates to the satisfaction of the Director of Oil & Gas, ADNR, and the Director of Habitat, ADF&G, in the course of obtaining their respective permits, that either (1) the

scientific data indicate the proposed crossing is not within an overwintering and/or spawning area; or (2) the proposed road or pipeline crossing will have no significant adverse impact to Dolly Varden overwintering and/or spawning habitat.

Lessee Advisories

5. Bird, Fish, and Marine Mammal Protection:
   a. Lessees shall comply with the Recommended Protection Measures for Spectacled Eiders developed by the USF&WS to ensure adequate protection of spectacled eiders during the nesting and brood rearing periods. Lessees shall comply with the Recommended Protection Measures for Steller's eider once they are developed by the USFWS.

   c. To minimize impacts on Dolly Varden (arctic char) overwintering areas, permanent, staffed facilities must be sited to the extent feasible and prudent outside identified Dolly Varden (arctic char) overwintering areas.

6. Aircraft Restrictions: In order to protect species that are sensitive to noise or movement, horizontal and vertical buffers will be required, consistent with aircraft, vehicle and vessel operations regulated by NSB Code ß19.70.050(I)(1) which codifies NSBCMP policy 2.4.4.(a). Lessees are encouraged to apply the following provisions governing aircraft operations in and near the sale area:

   a. From June 1 to August 31, aircraft overflights must avoid identified brant, white fronted goose, tundra swan, king eider, common eider, and yellow-billed loon nesting and brood rearing habitat, and from August 15 to September 15, the fall staging areas for geese, tundra swans, and shorebirds, by an altitude of 1,500 feet, or a lateral distance of one mile.

   b. To the extent feasible and prudent, all aircraft should maintain an altitude greater than 1,500 feet or a lateral distance of one mile, excluding takeoffs and landings, from caribou and muskoxen concentrations. A concentration means numbers of animals in excess of the general density of those animals found in the area.

   c. Human safety will take precedence over flight restrictions.

9. Sensitive Areas: Lessees are advised that certain areas are especially valuable for their concentrations of marine birds, marine mammals, fishes, or other biological resources; cultural resources; and for their importance to subsistence harvest activities. The following areas must be considered when developing plans of operation. Identified areas and time periods of special biological and cultural sensitivity include….(b) the Colville River Delta, January – December.